Nanopore platforms for biosensing applications

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Lab-on-a-chip is a dream for many people and our research focused on nanopore platforms go towards this direction. Nanoporous surface with embedded plasmonic antennas brings interesting applications; it allows to study of molecular assembly, particle transfer through 2D cell membrane or separation of cells and nanoparticles. However, high accurate nanofabrication techniques such as electron beam lithography, electron beam evaporation and reactive ion etching are necessary for preparation ordered arrays of nanostructures with correct properties. This talk will introduce our successes and issues of fabrication of SiN or SiO2 nanopores and gold nanocones or nanodiscs inside them or on the flat surface. Promising results from microspectroscopic measurements will be also discussed.